

I claim:

1. A method comprising precipitating a lithium phosphate from a mixture comprising a first aqueous solution containing lithium and sodium ions and a second aqueous solution containing phosphate and borate ions, isolating the precipitate, and washing and drying the precipitate to form a lithium phosphate catalyst.
2. The method of claim 1 wherein the first solution is prepared by dissolving in water a lithium compound selected from the group consisting of lithium hydroxide, lithium nitrate, lithium acetate, and mixtures thereof and a sodium compound selected from the group consisting of sodium hydroxide, sodium nitrate, sodium acetate, sodium carbonate, and mixtures thereof.
3. The method of claim 2 wherein the lithium compound is lithium hydroxide.
4. The method of claim 2 wherein the sodium compound is sodium hydroxide.
5. The method of claim 2 wherein the lithium compound is lithium hydroxide and the sodium compound is sodium hydroxide.
6. The method of claim 1 wherein the second solution is prepared by dissolving in water a phosphate compound selected from the group consisting of sodium phosphates, potassium phosphates, ammonium phosphates, and mixtures thereof and a borate compound selected from the group consisting of boric acid, sodium borates, potassium borates, ammonium borates, and mixtures thereof.
7. The method of claim 6 wherein the phosphate compound is a sodium phosphate.
8. The method of claim 6 wherein the borate compound is boric acid or a sodium borate.
9. The method of claim 6 wherein the phosphate compound is a sodium phosphate and the borate compound is a sodium borate.
10. The method of claim 1 wherein the first and the second solutions are heated, prior to mixing, to a temperature within the range of about 45°C to about 95°C.

- 11.** The method of claim **10** wherein the temperature is within the range of about 60°C to about 80°C.
- 12.** A lithium phosphate catalyst which contains effective amounts of boron and sodium to enhance the catalyst activity and selectivity for an isomerization of alkylene oxide to allylic alcohol.
- 13.** The catalyst of claim **12** which contains from about 0.03 wt% to about 1 wt% of boron.
- 14.** The catalyst of claim **12** which contains from about 0.1 wt% to about 0.8 wt% of boron.
- 15.** The catalyst of claim **12** which contains from about 0.01 wt% to about 1 wt% of sodium.
- 16.** The catalyst of claim **12** which contains from about 0.02 wt% to about 0.8 wt% of sodium.
- 17.** The catalyst of claim **12** which has a boron/lithium molar ratio within the range of about 0.001 to about 0.05.
- 18.** The catalyst of claim **12** which has a boron/lithium molar ratio within the range of about 0.003 to 0.03.
- 19.** The catalyst of claim **12** which has a boron/lithium molar ratio within the range of about 0.007 to about 0.02.
- 20.** The catalyst of claim **12** which has a sodium/lithium molar ratio within the range of about 0.0002 to about 0.02.
- 21.** The catalyst of claim **12** which has a sodium/lithium molar ratio within the range of 0.003 to about 0.01.
- 22.** An isomerization process of propylene oxide to allyl alcohol in the presence of a lithium phosphate catalyst which contains effective amounts of boron and sodium.
- 23.** The process of claim **22** which is performed in slurry phase.
- 24.** The process of claim **22** which is performed at a temperature within the range of 200°C to about 300°C.
- 25.** The process of claim **22** which is performed at a temperature within the range of about 240°C to about 280°C.